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| http://images.magnetmail.net/images/clients/ACS/092612Fries_thumb.jpgReducing acrylamide levels in french friesCredit: Jupiterimages/Photos.com/Thinkstock |

The process for preparing frozen, par-fried potato strips — distributed to some food outlets for making french fries — can influence the formation of acrylamide in the fries that people eat, a new study has found. Published in ACS’ Journal of Agricultural and Food Chemistry, the study identifies potential ways of reducing levels of acrylamide, which the National Toxicology Program and the International Agency for Research on Cancer regard as a “probable human carcinogen.”Acrylamide forms naturally during the cooking of many food products. Donald S. Mottram and colleagues explain that while acrylamide formation in fried potato products is inevitable, this research aims to better understand the chemistry involved, and to use computer models to determine how to minimize acrylamide levels in practice. The special feature of this approach is that, for the first time, it has been possible to link changes in natural potato components (glucose, fructose, amino acids, moisture) occurring during preparation and cooking with the extent of acrylamide formation. Such a rigorous approach has only been possible through collaboration between the food industry and food chemists from different disciplines. The commercial process (which includes potato selection and sorting, cutting, blanching, sugar augmentation, drying, frying and freezing), in combination with final cooking, generates the color, texture and flavor that consumers expect in french fries. This model facilitates evaluation of various processing and final cooking parameters to develop products with lower acrylamide. Additionally, the authors confirm previous reports, which found that minimizing the ratio of fructose to glucose in cut potato strips can reduce the amount of acrylamide that ends up in the french fries.

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| http://images.magnetmail.net/images/clients/ACS/092612JAGF_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673296&m=2276182&u=ACS&j=11462515&s=http://web.1.c2.audiovideoweb.com/1c2web3536/092612jagf.jpg) for high-resolution image |

ARTICLE #1 **FOR IMMEDIATE RELEASE**“Kinetic Model for the Formation of Acrylamide during the Finish-Frying of Commercial French Fries”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596900&m=2276182&u=ACS&j=11462515&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/jf302415n) CONTACT:Donald S. Mottram, Ph.D.University of ReadingReading RG6 6APUnited KingdomPhone: +44 118 378 8712Fax: +44 118 378 7708E-mail: d.s.mottram@reading.ac.uk [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #2 **FOR IMMEDIATE RELEASE****Taking the battle against the toxic trio beyond “Leaves of three, leave it be”**The Journal of Organic Chemistry

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| http://images.magnetmail.net/images/clients/ACS/092612PoisonIvy_thumb.jpgTaking the battle against the toxic trio beyond “Leaves of three, leave it be”Credit: iStockphoto/Thinkstock |

With more than half of all adults allergic to poison ivy, oak and sumac, scientists are reporting an advance toward an inexpensive spray that could reveal the presence of the rash-causing toxic oil on the skin, clothing, garden tools, and even the family cat or dog. Using the spray, described in ACS’ The Journal of Organic Chemistry would enable people to wash off the oil, or avoid further contact, in time to sidestep days of misery.Rebecca Braslau and colleagues explain that allergic reactions to oils of the toxic trio are more than a nusiance. They claim a huge human and economic toll, accounting for thousands of medical visits, days lost from work and school and sheer misery for the victims. It takes only 0.04th of a drop of the plants’ oil to trigger a reaction, and the oil is invisible. The scientists thus sought to begin developing a way to make the oil visible, so that people can do a reality check after venturing into outdoor areas where the toxic plants grow.They describe development of a spray that, when applied to leaves of poison ivy, oak and sumac, reacts with urushiol, the toxic oil produced by those plants. When exposed to an ordinary fluorescent light, the spray glows if urushiol is present, revealing the location of the oil. “This constitutes the groundwork for the future development of a spray to detect urushiol to avoid contact dermatitis,” the scientists say.The authors acknowledge funding from the [University of California Santa Cruz Committee on Research](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596901&m=2276182&u=ACS&j=11462515&s=http://senate.ucsc.edu/committees/cor-committee-on-research/index.html).

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| http://images.magnetmail.net/images/clients/ACS/092612JOC_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673297&m=2276182&u=ACS&j=11462515&s=http://web.1.c2.audiovideoweb.com/1c2web3536/092612joc.jpg) for high-resolution image |

ARTICLE #2 **FOR IMMEDIATE RELEASE**“Urushiol Detection Using a Profluorescent Nitroxide”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596902&m=2276182&u=ACS&j=11462515&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/jo301135m)CONTACT:Rebecca Braslau, Ph.D.University of California, Santa CruzSanta Cruz, Calif. 95064Phone: +831-459-3087Email: rbraslau@ucsc.edu [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #3 **FOR IMMEDIATE RELEASEDate palm juice: A potential new “green” anti-corrosion agent for aerospace industry**Industrial & Engineering Chemistry Research

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| http://images.magnetmail.net/images/clients/ACS/092612Palm_thumb.jpgDate palm juice: A potential new “green” anti-corrosion agent for aerospace industryCredit: iStockphoto/Thinkstock |

The search for a “greener” way to prevent corrosion on the kind of aluminum used in jetliners, cars and other products has led scientists to an unlikely source, according to a report in ACS’ journal Industrial & Engineering Chemistry Research. It’s the juice of the date palm — those tall, majestic trees that, until now, were noted mainly as sources of food and traditional medicines.Husnu Gerengi points out that strong, lightweight aluminum alloys are used to make planes, cars and industrial equipment. Aluminum corrodes when exposed to air, but unlike rusting steel, the corrosion of aluminum’s surface layer forms a protective film that prevents degradation of the underlying metal. However, that film breaks down in some harsh environments, like seawater, leaving the metal vulnerable. Engineers have developed coatings to protect aluminum in these applications, but many of these use potentially toxic chemicals. Previous research suggested that extracts of date palm leaves had an anti-corrosion effect. Gerengi decided to check date palm juice.He found that date palm juice inhibited corrosion of an aluminum alloy called AA7075, used in aerospace and other applications, in a salt solution. Gerengi noted that while an extract from date palm leaves is a known anticorrosive, this was the first test of the fruit’s juice. The juice, which he reported adsorbed into the aluminum’s surface, contains a number of sugars. Gerengi posited that these react with aluminum to form an anticorrosive film on the metal’s surface.The author acknowledges funding from the [Scientific and Technological Research Council of Turkey](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596904&m=2276182&u=ACS&j=11462515&s=http://www.tubitak.gov.tr/en/ot/10/).

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| http://images.magnetmail.net/images/clients/ACS/092612IECR_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673298&m=2276182&u=ACS&j=11462515&s=http://web.1.c2.audiovideoweb.com/1c2web3536/092612iecr.jpg) for high-resolution image |

ARTICLE #3 **FOR IMMEDIATE RELEASE**“Anti-Corrosive Properties of Date Palm (Phoenix dactylifera L.) Fruit Juice on 7075 Type Aluminium Alloy in 3.5% NaCl Solution”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596905&m=2276182&u=ACS&j=11462515&s=http://pubs.acs.org/stoken/presspac/presspac/abs/10.1021/ie301771u)CONTACT:Husnu Gerengi, Ph.D.Duzce UniversityDuzceTurkeyPhone: +90-505-3987953Email: husnugerengi@duzce.edu.tr [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif ARTICLE #4 **FOR IMMEDIATE RELEASE: A PressPac Instant Replay\*****New substances 15,000 times more effective in destroying chemical warfare agents**Biochemistry

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| http://images.magnetmail.net/images/clients/ACS/080812Mask_thumb.jpgNew substances 15,000 times more effective in destroying chemical warfare agentsCredit: iStockphoto/Thinkstock |

In an advance that could be used in masks to protect against nerve gas, scientists are reporting development of proteins that are up to 15,000 times more effective than their natural counterpart in destroying chemical warfare agents. Their report appears in ACS’ journal Biochemistry.Frank Raushel, David Barondeau and colleagues explain that a soil bacterium makes a protein called phosphotriesterase (PTE), which is an enzyme that detoxifies some pesticides and chemical warfare agents like sarin and tabun. PTE thus has potential uses in protecting soldiers and others. Natural PTE, however, works against only one of the two molecular forms of these chemical warfare agents, and it happens to be the less toxic form. The scientists thus set out to develop new versions of PTE that were more effective against the most toxic form.To improve the enzyme's activity, Raushel and colleagues used an approach called “directed evolution.” This technique imitates the way natural selection leads to improved forms of the biochemical substances in living things. In using directed evolution, the team made small random changes to the natural enzyme's chemical architecture and then tested resulting mutant enzymes for their ability to break down nerve agents. They isolated several mutants that fit the bill, including one that proved to be 15,000 times more effective than the natural enzyme.The authors acknowledge funding from the [National Institutes of Health](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596906&m=2276182&u=ACS&j=11462515&s=http://www.nih.gov/).

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| http://images.magnetmail.net/images/clients/ACS/092612Biochem_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673299&m=2276182&u=ACS&j=11462515&s=http://web.1.c2.audiovideoweb.com/1c2web3536/092612biochem.jpg) for high-resolution image |

ARTICLE #4 **FOR IMMEDIATE RELEASE**“Enzymes for the Homeland Defense: Optimizing Phosphotriesterase for the Hydrolysis of Organophosphate Nerve Agents”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596907&m=2276182&u=ACS&j=11462515&s=http://pubs.acs.org/stoken/presspac/presspac/abs/10.1021/bi300811t)CONTACT:Frank M. Raushel, Ph.D.Department of ChemistryTexas A&M UniversityCollege Station, Texas 77842Phone: 979-845-3373Fax: 979-845-9452Email: raushel@tamu.edu**\* A previous PressPac item that you may have missed**   [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #5 **FOR IMMEDIATE RELEASE****A birth control pill for men? When?**Chemical & Engineering News

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| http://images.magnetmail.net/images/clients/ACS/092512CEN_thumb.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673300&m=2276182&u=ACS&j=11462515&s=http://web.1.c2.audiovideoweb.com/1c2web3536/092612cen.jpg) for high-resolution image. |

When will men have their own birth control pill? Scientists have been predicting the debut of a male pill within 5 years for the last 30 years. The factors accounting for that delay — and new optimism that a male pill will emerge within a decade — are the topic of a story in the current edition of Chemical & Engineering News. C&EN is the weekly newsmagazine of the American Chemical Society, the world’s largest scientific society.In the story, Michael M. Torrice, C&EN associate editor, describes the need for a male version of the oral contraceptive pill that revolutionized family planning 50 years ago. For example, there are few choices of contraceptives for men, half of all U.S. pregnancies are unintended, and those pregnancies cost state and federal programs about $11 billion annually.Despite that need, the few pharmaceutical companies working to develop a male pill have discontinued research during the last five years. The story explains the scientific and regulatory hurdles in developing new contraceptives and describes promising new research on so-called non-hormonal male contraceptives.ARTICLE #5 **FOR IMMEDIATE RELEASE**"Hunt for the Male Pill: Scientists Search for a Drug that Can Reversibly Derail Sperm Production"This story is available at: [http://cenm.ag/contraceptive](http://www.mmsend88.com/link.cfm?r=800557068&sid=20716741&m=2276182&u=ACS&j=11462515&s=http://cenm.ag/contraceptive)  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif **Journalists’ Resources****About the Weekly PressPac**The ACS Weekly PressPac consists of summaries of research published in the American Chemical Society’s more than 40 peer-reviewed journals and its weekly newsmagazine, Chemical & Engineering News. ACS journals publish more than 35,000 articles annually. Although not traditional press releases, PressPac content can be used to prepare news stories, in conjunction with the full-text PDF and an interview with the authors. PressPac stories and the accompanying full-text PDFs also can be an excellent resource for features and background.**Press releases, briefings and more from ACS’ 244th National Meeting**[www.eurekalert.org/acsmeet.php](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596909&m=2276182&u=ACS&j=11462515&s=http://www.eurekalert.org/acsmeet.php) [http://www.ustream.tv/channel/acslive](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596910&m=2276182&u=ACS&j=11462515&s=http://www.ustream.tv/channel/acslive%20) **Inside Science News Service**For thoroughly enjoyable multimedia coverage of the science behind the news — a valuable resource for journalists and news media organizations everywhere. [Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596911&m=2276182&u=ACS&j=11462515&s=http://www.insidescience.org/) to visit the Inside Science News website.**C&EN Video Spotlight: Taming Explosive Boiling with a Coating**It looks pretty cool when water skitters across the surface of a hot frying pan. But that same phenomenon, called the Leidenfrost effect, can be big trouble for equipment exposed to water at high temperatures, such as nuclear reactors, because sometimes the transition away from it leads to explosive boiling. An international team of researchers has now developed a strategy that tames the process, which was published in the journal Nature. As explained by C&EN Senior Correspondent Mitch Jacoby, the research team started with steel spheres, then applied a patented coating which is normally used to keep rain from accumulating on car side mirrors. The coating renders the spheres super-water-repellent. And it leads to smooth, nearly bubble-less boiling. The researchers plan to examine scaleup possibilities for the coating soon.[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=20673301&m=2276182&u=ACS&j=11462515&s=http://www.youtube.com/watch?v=Aq8IssCqrug) to view the video.**Must-Read from C&EN: Annual Employment & Salary Survey**With jobs a national concern, Chemical & Engineering News is presenting the much-awaited results of its popular annual report on the employment situation in chemistry, which touches more than 96 percent of all manufactured goods. For the full story by Sophie L. Rovner, C&EN assistant managing editor, contact newsroom@acs.org. **ACS Pressroom Blog** The ACS Office of Public Affairs' [pressroom blog](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596912&m=2276182&u=ACS&j=11462515&s=https://communities.acs.org/community/science/science_news) highlights research from ACS’ more than 40 peer-reviewed journals and National Meetings. **Bytesize Science Blog** Educators and kids, put on your thinking caps: The American Chemical Society has [a blog for Bytesize Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596913&m=2276182&u=ACS&j=11462515&s=http://www.bytesizescience.com), a science podcast for kids of all ages.  **ACS Satellite Pressroom: Daily news blasts on Twitter** The satellite press room has become one of the most popular science news sites on Twitter. To get our news blasts and updates, create a free account at [https://twitter.com/signup](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596914&m=2276182&u=ACS&j=11462515&s=https://twitter.com/signup). Then visit [http://twitter.com/ACSpressroom](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596915&m=2276182&u=ACS&j=11462515&s=http://twitter.com/ACSpressroom) and click the ‘join’ button beneath the press room logo. **C&EN on Twitter**Follow @cenmag <[http://twitter.com/cenmag](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596916&m=2276182&u=ACS&j=11462515&s=http://twitter.com/cenmag)> for the latest news in chemistry and dispatches from C&EN's blog, CENtral Science <[http://centralscience.org](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596917&m=2276182&u=ACS&j=11462515&s=http://centralscience.org)>.**ACS Press Releases** [Press releases](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596918&m=2276182&u=ACS&j=11462515&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_NEWSRELEASES&node_id=222&use_sec=false&sec_url_var=region1&__uuid=50b5ab93-801d-4d0d-868f-b9507ff9d709) on a variety of chemistry-related topics.[To Top](#top)http://images.magnetmail.net/images/clients/acs/goldline.gif**ACS Videos**The American Chemical Society encourages news organizations, museums, educational organizations and other web sites to embed links to these videos.**Spellbound: How Kids Became Scientists**

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The road to a Nobel Prize began for one scientist in elementary school when his father placed a sign on his bedroom door proclaiming him to be a “doctor.” This is just one of the many experiences that helped launch the careers of scientists from diverse backgrounds who are featured in a new ACS video series called [Spellbound: How Kids Became Scientists](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596919&m=2276182&u=ACS&j=11462515&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1355&content_id=CNBP_028033&use_sec=true&sec_url_var=region1&__uuid=e8e6ee76-0abe-4e78-84c4-3717c995c65e). **Prized Science video series**

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Prized Science: How the Science Behind ACS Awards Impacts Your Life video series is new for 2012! The first episode features the research of Dr. Robert Langer, winner of the 2012 ACS Priestley Medal. He is a professor at the Massachusetts Institute of Technology. The Priestley Medal is the highest honor of the ACS, and it recognizes Langer’s pioneering work making body tissues in the lab by growing cells on special pieces of plastic. Langer’s team has used the approach to make skin for burn patients, for instance, with the goal of eventually making whole organs for transplantation. The second episode features Dr. Chad Mirkin, winner of the 2012 ACS Award for Creative Invention. His research has provided patients with faster diagnoses for influenza and other respiratory infections, and new tests that improve care for heart disease. More episodes will appear later in the year. The series is available at the [Prized Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596920&m=2276182&u=ACS&j=11462515&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=446&content_id=CTD1_018821&use_sec=true&sec_url_var=region1&__uuid=594bce97-0b05-4df7-b759-1a0f9156c5d8) website and on DVD. **The Periodic Table Table Featuring Theo Gray**

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Some people collect stamps. Wolfram Research co-founder and author Theo Gray collects elements. Step into his office, and you'll see a silicon disc engraved with Homer Simpson, a jar of mercury, uranium shells and hundreds of other chemical artifacts. But his real DIY masterpiece is the world's first ["periodic table table."](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596921&m=2276182&u=ACS&j=11462515&s=http://www.bytesizescience.com/index.cfm/2012/2/22/The-Periodic-Table-Table-Featuring-Theo-Gray) Within this masterfully constructed table-top lay samples of nearly every element known to man, minus the super-radioactive ones.**Healing the voice: Synthetic vocal cords**

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[Synthetic vocal cords](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596922&m=2276182&u=ACS&j=11462515&s=http://www.bytesizescience.com/index.cfm/2012/5/22/Bytesize-Science-Healing-the-voice-with-synthetic-vocal-cords%20) may someday heal the voices of singers like Julie Andrews -- whose legendary voice was permanently damaged in a 1997 operation. Filmed in the lab of 2012 ACS Priestley Medalist and MIT Institute Professor Robert Langer, our latest video explains how artificial polymer vocal cords may help repair damaged vocal tissue.[The Chemistry of Beer](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596923&m=2276182&u=ACS&j=11462515&s=http://youtu.be/2xKpQ11CpVE)[The Chemistry of Cheese](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596924&m=2276182&u=ACS&j=11462515&s=http://youtu.be/jMAlToEYHJM)[Without a scratch: Self-Healing Materials](http://www.mmsend88.com/link.cfm?r=800557068&sid=20596925&m=2276182&u=ACS&j=11462515&s=http://youtu.be/Bx3WTSSD5f0) [To Top](#top)  http://images.magnetmail.net/images/clients/ACS/goldline.gif**ACS Podcasts**

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